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## Lectotype Designations and Notes on the Moth Genera *Melanolophia*, *Pherotesia*, and *Melanotesia* (Lepidoptera, Geometridae)

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Information is presented in this paper that has come to hand since the appearance of my revision of the genera *Melanolophia*, *Pherotesia*, and *Melanotesia* (Rindge, 1964). The data fall into two categories. The first is concerned with the designation of certain lectotypes that was not done in the original paper. The second section gives some new distributional data, the placing of one name into synonymy, and a description of the male of a species heretofore known only from a single female.

### ACKNOWLEDGMENTS

The author wishes to thank the following colleagues who have aided in the preparation of this paper. Mr. D. S. Fletcher, of the British Museum (Natural History), has supplied information on various type series so that lectotype designations could be made, and has checked the one new synonymy proposed in this paper. Dr. E. L. Todd, of the Insect Identification and Parasite Introduction Research Branch, United States Department of Agriculture, and Dr. W. C. McGuffin, of the Canadian Department of Forestry, have supplied the author with specimens cited in this paper. The genitalic drawing was done by Mr. J. C. Barberis of the American Museum of Natural History.

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## DESIGNATION OF LECTOTYPES

When William Warren labeled the specimens of his type series, one was designated as the type. However, this information was not given in the original description, as only the number of specimens was indicated. Consequently, lectotype designations are required.

The following lectotypes are all in the collection of the British Museum (Natural History).

*Melanolophia apicalis* (Warren)

*Cymatophora apicalis* WARREN, 1900, p. 195.

*Melanolophia apicalis*: RINDGE, 1964, p. 258, text figs. 7, 100, pl. 3, fig. 3.

Warren described *apicalis* from three male specimens, all from Castro, Paraná, Brazil. They are labeled "Feb. 97," "Aug. 98"; the third is without any date. The first of these was labeled as "Type ♂" by Warren, and it is hereby designated as the lectotype.

*Melanolophia intervallata* (Warren)

*Nipteria intervallata* WARREN, 1900, p. 189.

*Melanolophia intervallata*: RINDGE, 1964, p. 323, text figs. 46, 131, pl. 6, fig. 2.

*Cymatophora flaviceps* WARREN, 1907, p. 274 (synonym of *intervallata*).

According to the original description, *intervallata* was named from one male and one female from Paramba, [Imbabura], Ecuador. The male has not been located in the collection of the British Museum (Natural History); the female bears Warren's type label. The latter specimen is designated as the lectotype.

Warren described *flaviceps* from several specimens from Pozuzu, Huánuco, Peru. The male specimen bearing Warren's "Type ♂" label is designated as the lectotype.

*Melanolophia reducta reducta* (Warren)

*Cymatophora reducta* WARREN, 1904, p. 553.

*Melanolophia reducta reducta*: RINDGE, 1964, p. 326, pl. 6, fig. 4.

Warren described *reducta* from a series of four males from Cerro de Pasco, Huancabamba, Peru. The specimen bearing his type label, and with the genitalia on Geometridae slide no. 4380, is hereby designated as the lectotype.

*Melanolophia argilaria* (Guenée)

*Tephrosia argilaria* GUENÉE, 1857, p. 263. OBERTHÜR, 1913, p. 281, pl. CLXX, fig. 1667.

*Melanolophia argilaria*: RINDGE, 1964, p. 336, text fig. 56, pl. 6, fig. 14.

Guenée described *argilaria* from one male and one female, both from Colombia. I was in error in stating that the female was in the collection of the Muséum National d'Histoire Naturelle, Paris; it is in the British Museum (Natural History) collection. Oberthür (1913) had restricted the type to the original female, and had illustrated it. This specimen should therefore be considered as the lectotype, and not the male as I had previously indicated.

*Melanolophia mutabilis* (Warren)

*Cymatophora mutabilis* WARREN, 1897, p. 466.

*Cymatophora mutabilis* ab. *fasciata* WARREN, 1897, p. 467.

*Melanolophia mutabilis*: RINDGE, 1964, p. 340, text figs. 60, 139, pl. 6, fig. 18, pl. 7, fig. 1.

Both the above names are based on Jamaican material. The lectotype of *mutabilis* is designated as the specimen bearing Warren's "Type ♀" label. The moth with his "Type ♂" label for *fasciata* is hereby designated as the lectotype.

*Pherotesia potens* Warren

*Pherotesia potens* WARREN, 1905, p. 356. RINDGE, 1964, p. 364, text figs. 80, 157, pl. 8, fig. 6.

The specimen bearing Warren's "Type ♂" label is designated as the lectotype; it is from Yungas de La Paz, [La Paz], Bolivia.

*Melanotesia siderata* (Dognin)

*Calospila ? siderata* DOGNIN, 1901, p. 184.

*Melanotesia siderata*: RINDGE, 1964, p. 384, text fig. 96, pl. 9, fig. 9.

*Melanoscia albimacula* WARREN, 1904, p. 112 (synonym of *siderata*).

Warren described *albimacula* from two males. The specimen bearing his "Type ♂" label is designated as the lectotype.

DESCRIPTIVE, SYNONYMIC, AND  
DISTRIBUTIONAL NOTES

Additional specimens of this group have come to hand since the

appearance of my revision. Supplementary information is given below. The material from South America was collected either by Mr. L. E. Peña or by Dr. P. Wygodzinsky of the Department of Entomology, assisted by his wife. All specimens are in the collection of the American Museum of Natural History.

*Melanolophia praeapicata* (Warren)

*Apicia praeapicata* WARREN, 1900, p. 208.

*Melanolophia praeapicata*: RINDGE, 1964, p. 260, text figs. 9, 101, pl. 3, fig. 5.

*Cymatophora limbata* WARREN, 1905, p. 354. New synonymy.

Warren described *limbata* from a single male specimen, taken at Sapucay, near Villa Rica, Paraguay. The type is in the collection of the British Museum (Natural History).

*Melanolophia inatrata* Rindge

*Melanolophia inatrata* RINDGE, 1964, p. 267, text figs. 14, 105, pl. 3, fig. 10.

This species is known from Bolivia and southern Peru (the department of Puno). Additional specimens have been examined from the departments of Cusco (Quincemil, August, elevation 2400 feet) and Madre de Dios (Avispas, September).

*Melanolophia umbrosa* Rindge

*Melanolophia umbrosa* RINDGE, 1964, p. 271, text figs. 16, 108, pl. 3, fig. 13.

The species was described from material taken in Bolivia, southern Peru, and Colombia. Previous records from Peru were from the department of Puno; the species also occurs in the departments of Cusco (Quincemil, August, elevation 2400 feet) and Madre de Dios (Avispas, September). *Melanolophia umbrosa* and *inatrata* apparently fly together.

*Melanolophia trisurca trisurca* (Dognin)

*Tephrosia trisurca* DOGNIN, 1895, p. 114.

*Melanolophia trisurca trisurca*: RINDGE, 1964, p. 283, text figs. 25, 115, pl. 4, fig. 7.

This population has heretofore been known only from two males from the province of Loja, Ecuador. One more male has come to hand from Zamora in the province of Santiago-Zamora, Ecuador, in April. Both the specimen and its genitalia agree quite well with the descriptions given in my revisionary study.

*Melanolophia trisurca elongata* Rindge

*Melanolophia trisurca elongata*: RINDGE, 1964, p. 284, text fig. 24, pl. 4, fig. 8.

The southern population of *trisurca* occurs in Peru (the departments of Piura and Amazonas) and Bolivia. It is now known from Huacapistana in the department of Junin; the specimen was caught in July at 1800 meters in elevation.

*Melanolophia flexilinea flexilinea* (Warren)

*Cymatophora flexilinea* WARREN, 1906, p. 507.

*Melanolophia flexilinea flexilinea*: RINDGE, 1964, p. 305, text figs. 38, 124, pl. 5, fig. 6.

This subspecies is known from the southern portion of Mexico (the Distrito Federal, and the states of Veracruz and Oaxaca) and Honduras, and the population has now been collected in the mountains of the state of Durango (10 miles west of El Salto) at 9000 feet in elevation in the month of July. The northern specimens, in the Canadian National Collection, Ottawa, tend to be somewhat darker in coloration than the other known examples, possibly owing, in part at least, to the freshness of the moths.

*Melanolophia signataria signataria* (Walker)

*Boarmia signataria* WALKER, 1860, p. 350.

*Melanolophia signataria signataria*: RINDGE, 1964, p. 313, text figs. 4, 40, 126, pl. 5, fig. 12.

The southern distribution of the nominate subspecies has heretofore been represented by a single Mississippi record (Rindge, 1964, fig. 4). Specimens of the population have now been examined from Montgomery County in eastern Texas, collected by A. and M. E. Blanchard in mid March. These extend the range to the west for a considerable distance.

*Melanolophia orthotis* Prout

*Melanolophia orthotis* PROUT, 1933, p. 93. Rindge, 1964, p. 321, text figs. 44, 130, pl. 5, fig. 18.

The species is known from the drainage basin of the upper Amazon River. Previous Peruvian records were from the department of Puno. It is now known from the departments of Cusco (Quincemil, August,

elevation 2400 feet) and Madre de Dios (Avispas, September), where it flies with *inatrata* and *umbrosa*.

*Melanolophia intervallata* (Warren)

*Nipteria intervallata* WARREN, 1900, p. 189.

*Melanolophia intervallata*: RINDGE, 1964, p. 323, text figs. 46, 131, pl. 6, fig. 2.

This widely ranging species is known from Costa Rica, Panama, Ecuador, Peru, and Brazil. In Ecuador the only record is from the province of Imbabura; it also occurs in the province of Guayas (Balao Chico) in the month of April.

*Melanolophia madefactaria* (Dyar)

Figure 1

*Tephrosia madefactaria* DYAR, 1914, p. 425.

*Melanolophia madefactaria*: RINDGE, 1964, p. 330, text fig. 134, pl. 6, fig. 8.

Recent collecting on the island of Dominica has produced several specimens, representing both sexes, of this endemic species, which has heretofore been known only from the unique female type. The two males are similar in color and maculation to the three females, although both sexes show considerable variability. This is expressed in the amount and intensity of the dark brown scaling on the outer portion of both the upper and under surfaces of the wings. Four specimens have the basal and median areas of the upper surface ochraceous buff, whereas one female, taken in February, has the entire upper surface suffused with a warm brown.

MALE GENITALIA: Uncus tapering from wide base, becoming swollen apically, with ventral surface concave, and terminating in single, small point; socius represented by three or four setae; gnathos with wide lateral margins, narrowed medially, with two small posteriorly directed points, separated by about twice their length; each valve with small costal swelling; valvula with row of heavy setae, enlarged basally; processes of valves asymmetrical, one on left side longer than that on right; right process slender, with apex having heavy spine at right angle to process, process extending to posterior margin of gnathos; left process extending to base of uncus, similar to one on right side but with distal one-half narrowed; anellus sharply constricted medially, widened posteriorly into T-shaped process; tegumen widest posteriorly; saccus elongate, narrow; aedeagus longer than combined lengths of tegumen and saccus, with slender, elongate, sclerotized projection posteriorly; vesica unarmed. Abdomen with both sets of tufts on  $A_3$  present,

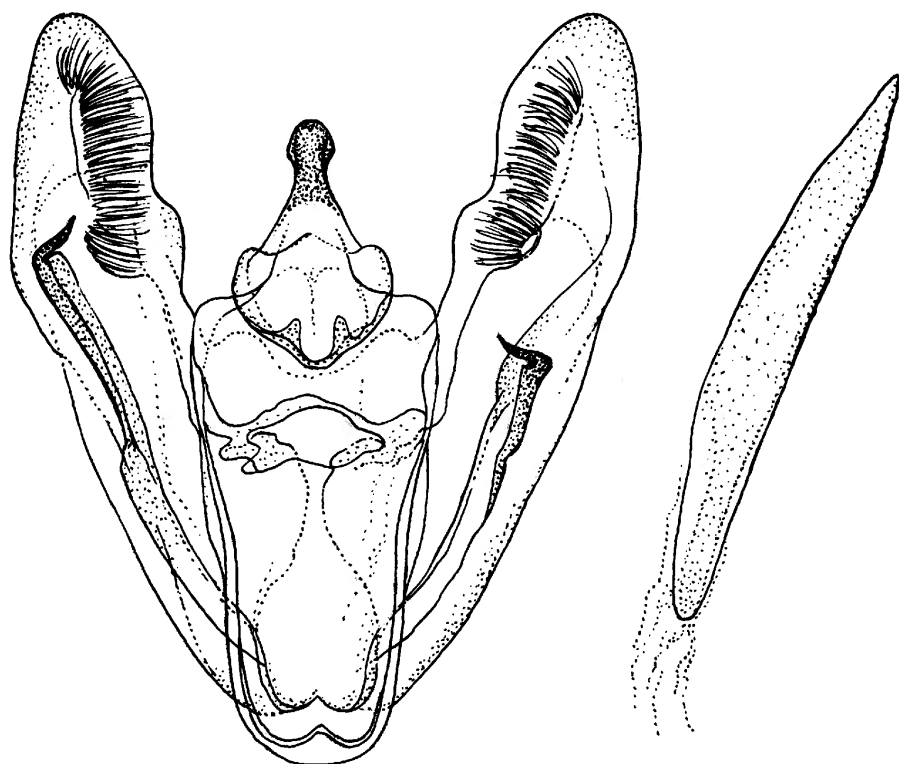


FIG. 1. Male genitalia of *Melanolophia madefactaria* (Dyar); 0.4 mile east of Pont Casse, Dominica, June 15, 1964 (O. S. Flint, Jr.; United States National Museum collection).

outer ones not fused together; posterior double comb consisting of about 12 to 14 modified, well-spaced setae medially on each side, laterally with numerous setae very closely spaced.

The male genitalia will key out to couplet 55 in my revision (1964, p. 253). The gnathos of the present species has two small median points separated by about twice their length.

Two dissections of female genitalia have been made from this material. The posterior end of the lamella postvaginalis consists of two rounded lobes in these preparations, rather than the more pointed processes illustrated in my figure 134 (1964).

The following specimens have been examined; they are all from Dominica: Freshwater Lake, February 21, 1964 (Dale F. Bray), one female; 0.4 mile east of Pont Casse, April 21, 1964 (O. S. Flint, Jr.), one female; same data, June 15, 1964, one male; 1.3 miles east of Pont Casse, May 12, 1964 (O. S. Flint, Jr.), one female; 2.2 miles east of

Pont Casse, June 6, 1964 (O. S. Flint, Jr.), one male. These five specimens are in the collection of the United States National Museum, Smithsonian Institution.

*Melanolophia bugnathos* Rindge

*Melanolophia bugnathos* RINDGE, 1964, p. 345.

This species consists of three subspecies, ranging from Bolivia and Peru (*b. bugnathos* Rindge, 1964, p. 345, text figs. 63, 143, pl. 7, fig. 5) and Ecuador (*b. contracta* Rindge, 1964, p. 347, text fig. 64, pl. 7, fig. 6), to Panama and Costa Rica (*b. elaphra* Rindge, 1964, p. 347, pl. 7, fig. 7).

New material has come to hand from three different localities in Ecuador. Specimens from the northern province of Pichincha (Quito to Santo Domingo, February, elevation 3950 feet) and from the southwestern province of El Oro (Zaruma to Machala, April, elevation 2800 feet) belong to the subspecies *contracta*. This taxon was described from material taken in the northern and central provinces of Imbabura and Bolivar. The specimens from the southern province of Santiago-Zamora (Cumbaratza, April) must be regarded as nominate *bugnathos*, based on the structures of the male genitalia.

Thus two subspecies occur in Ecuador. The nominate population is found in the far south, to the east of the Cordillera de Matanga in the drainage area of the Rio Zamora. The subspecies *contracta*, at least in the southern portion of the country, occurs west of the Andes.

*Melanolophia semarcata* Rindge

*Melanolophia semarcata* RINDGE, 1964, p. 355, text fig. 72, pl. 7, fig. 15.

This species was described from specimens taken in the departments of Pasco and Huanuco in central Peru. An additional specimen has now come to hand from Estancia Naranjal, San Ramon, the department of Junin, captured in July at an elevation of 3900 feet.

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